

**Abstract****Birefringence-free passive optical component**

- 5 The production of optical waveguides on waveguide bases which, for example, are formed from a correspondingly structured buffer layer, reduces the birefringence which occurs owing to thermally induced stresses during the glass production process. Therefore, the concentration of dopants  
10 10 (for example boron atoms) in the cladding layer can be reduced to achieve a birefringence-free optical component as complete adaptation of the thermal coefficient of expansion of the glass to that of the silicon substrate is no longer necessary. This has the enormous advantage that  
15 15 optical components, which comprise optical waveguides of this type, remain stable relative to external influences for a long time.